CODE 923 HIGHLIGHTS FOR MAY – JUNE 2002

** Levine gives interview re: Baltimore Children's Asthma Project

Dr. Elissa Levine (Code 923) was interviewed for an article that appeared in the Baltimore Sun, Maryland Section, on May 1, 2002 entitled "Hoping to Pull Answers out of the Air". The article discussed the Baltimore Children's Asthma Project that Dr. Levine and others from the Biospheric Sciences Branch are working on in collaboration with Dr. Carol Blaisdell and others from the University of Maryland Medical System. The project involves identifying environmental trends and triggers that may cause children's asthma using ground based and remotely sensed data in combination with clinical data. The asthma project is part of NASA GSFC's Healthy Planet: Earth Science and Public Health program.

** EO-1 acquisition of La Plata Tornado Scar Continues to Generate Interest

The EO-1 acquisition of the La Plata Tornado Scar on May 3 has generated a great deal of public interest. Following the NASA press release on Thursday, May 4, the story was picked up by NBC news and an EO-1/ALI image was shown on Channel 4 that evening. Coverage, including images, continued throughout Friday morning on both Channels 4 and 7. Two sections of the Sunday Washington Post (Outlook and Metro) featured an explanation and EO-1 images of the scar, giving accreditation to GSFC. The image also appeared in the NY Times.

** Special AERONET session at AGU Spring meeting

A special session on all aspects of Aerosol Robotic Network (AERONET) related research was held in Washington DC on May 31 within the framework of the AGU Spring Meeting. There were 11 oral papers and 24 posters. The abstracts may be viewed on the AGU website: Spring Meeting, Atmosphere, Special Session, A08 (AERONET: Aerosol observations related investigations and synergism) http://www.agu.org/meetings/sm02top.html.

AERONET Project Leader Brent N. Holben served as a Convener for the Special Session. Dr. Michael D. King (NASA/GSFC) and Dr. Didier Tanre (LOA, France) chaired the plenary session. Dr. Norm T. O'Neill (University of Sherbrooke, Quebec, Canada) and Dr. Alexander Smirnov (GEST Center, UMBC) presided at the Poster session.

The AERONET network is highly regarded by the scientific community for its accuracy and distribution of column integrated aerosol retrievals. The overall federated network currently maintains approximately 175 instruments deployed at 125 permanent sites. AERONET data is either a source for aerosol characterization or a powerful tool for the satellite product validation.

AERONET Project leader Brent N. Holben gave a broad overview of the project current status, detailed the current distribution and plans for expanded collaboration. He emphasized the federative and collaborative nature of the network and importance of growing AERONET public domain database. The diversity of the measured optical properties contributes to comparative assessments for health and climate change investigations.

Invited paper by T. Nakajima (University of Tokyo, Japan) overviewed the past scientific and engineering progresses of the sun/sky radiometry, current achievements and future perspectives. He noted that AERONET data along with the data from other networks are invaluable for various applications such as satellite remote sensing validation and chemical transport model validation.

Y. Kaufman (NASA/GSFC) in his invited talk presented recently produced daily MODIS aerosol data for the whole year of 2001, showed the concentration and dynamics of aerosol over ocean and large parts of continents. The data were validated against the AERONET measurements. AERONET data were used to answer some critical questions related to the radiative forcing assessments, in particular, what is the concentration and properties of baseline aerosol and that of anthropogenic aerosol.

Invited talk given by D. Tanre (LOA, France) overviewed the climatology of dust aerosol size distribution and optical properties derived from remotely sensed data. Simultaneous spectral remote observations of dust properties from space and from the ground created a powerful tool for the determination of dust optical properties in the total atmospheric column.

Other presenters emphasized that AERONET data are critical for the non-spherical aerosol retrieval method employing light scattering by spheroids (O. Dubovik), for the analysis of cloud optical thickness retrieved from CIMEL measurements (A. Marshak), for the evaluation of the assimilated aerosol climatology (W. Collins), and for the validation of the simulated spatial and temporal variability of the soil absorption properties (P. Ginoux).

E. J. Welton presented current status and perspective of the Micro-pulse Lidar network (MPL) for measurements of aerosol and cloud vertical distributions at co-located AERONET sites. The AERONET optical depth is used as input to the MPL processing routines, which calculate aerosol extinction profile and MPL calibration value.

Suggestions for a detailed AERONET workshop and other special sessions were made by a number of attendees.

**** GIMMS grant results in low-cost receiving station for University of Florida**

Jim Tucker, Code 923, provided a grant to a University of Florida student, Lucas Moxey, to build a low-cost satellite receiving station for receiving NOAA polar-orbiting AVHRR satellite data. Moxey developed the low-cost antenna station as a high school student in 1997 to study the effect of El Nino in Argentina. The antennae is constructed from pvc pipe wrapped with copper wire. The grant was less than $500 which was used to build the station, including the fabrication and installation of the antenna, cables and receivers. The image-reading software, WXSat, which was necessary for data reception, was available for free from the Internet.

The system was installed by Moxey and the Department of Geography atop Turlington Hall at the University of Florida in Gainesville and will be operational by this fall semester. Currently University researchers have to wait a month or two to receive satellite images. Real-time images received at the station will be available to the public through an archive in the geography network.

The information above was partially extracted from an article in the University of Florida paper, "The Alligator", of May 23, 2002.

**** Landsat ETM+/TM Radiometric Calibration Workshop**

The Landsat-7 ETM+ and Landsat-5 TM calibration working group meetings were hosted this spring by the Center for Imaging Science (CIS) at Rochester Institute of Technology. Dr. John Schott of the CIS is an investigator working on the thermal calibration of the Landsat sensors. These working groups meet twice yearly to discuss recent Landsat-7 and Landsat-5 calibration results and recommend changes to the radiometric calibration parameters and procedures for the current and historical datasets. Updated calibration results presented at this meeting continue to show that the Landsat-7 ETM+ instrument is extremely radiometrically stable, showing no statistically significant trends in radiometric gain since launch in any of the spectral bands. The confidence intervals for the trends limit the maximum change that may be occurring to less than 1% per year. New Landsat-5 TM thermal band calibration results show a deviation from ground based measurements of about 2%. No changes were recommended for the Landsat-7 ETM+ radiometric calibration.

**** Headquarters updated on status of Northern Eurasia Earth Science Partnership Initiative**

Don Deering gave a presentation on June 6 regarding the status of the Northern Eurasia Earth Science Partnership Initiative (NEESPI) at Headquarters to Jack Kaye and his Program Managers in Code YS. Deering was joined by Hank Shugart, Corcoran Professor in the Environmental Sciences Department at the University of Virginia and Susan Conard of the U.S. Forest Service Headquarters, Washington DC in the presentation. The

objective was to obtain recommendations for the next steps in moving the initiative forward. Some suggestions were made by the Program Managers and some changes will be made to the strategy. The next step will be to make a presentation to the Associate Administrator, Dr. Asrar, probably in August following the next meetings of the NEESPI working group in Krasnoyarsk, Russia in early August. The Russian side of the initiative is seeking high level administration endorsement of the initiative on the U.S. side to make a strong case for receiving substantial funding from the Russian government to support the initiative.